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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/404,570      09/23/99      MALHOTRA

S      D/99531

EXAMINER

IM52/0328

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ART UNIT

PAPER NUMBER

1714  
DATE MAILED:

03/28/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trad marks**

# Office Action Summary

Application No.  
**09/404,570**

Applicant(s)  
**Malhotra et al.**

Examiner  
**Calle Shosho**

Group Art Unit  
**1714**

☒ Responsive to communication(s) filed on Jan 3, 2001

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claim

☒ Claim(s) 1-24 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☒ Claim(s) 22 is/are allowed.

☒ Claim(s) 1-21, 23, and 24 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

Art Unit: 1714

**DETAILED ACTION**

1. All outstanding rejections except those described below are overcome by applicants' amendment filed 1/3/01.

**Claim Rejections - 35 USC § 103**

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-5, 8-13, and 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malhotra et al. (U.S. 5,931,995) in view of either Schwarz et al. (U.S. 5,122,187) or Siddiqui (U.S. 5,939,468), Watt (U.S. 4,105,806), and Takazawa et al. (U.S. 5,279,655).

The rejection is adequately set forth in paragraph 6 of the office action mailed 10/16/00, Paper No. 5, and is incorporated here by reference.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Malhotra et al. in view of either Schwarz et al. or Siddiqui, Watt, and Takazawa et al. as applied to claims 1-5, 8-13, and 17-21 above, and further in view of Nishizaki et al. (U.S. 6,022,910).

The rejection is adequately set forth in paragraph 7 of the office action mailed 10/16/00, Paper No. 5, and is incorporated here by reference.

Art Unit: 1714

5. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malhotra et al. in view of either Schwarz et al. or Siddiqui, Watt, and Takazawa et al. as applied to claims 1-5, 8-13, and 17-21 above, and further in view of Shacklette (U.S. 5,378,403) and WO 93/22775.

The rejection is adequately set forth in paragraph 8 of the office action mailed 10/16/00, Paper No. 5, and is incorporated here by reference.

6. Claims 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malhotra et al. (U.S. 5,931,995) in view of Watt (U.S. 4,105,806).

Malhotra et al. discloses a hot melt ink possessing melting temperature of 125<sup>0</sup>-160<sup>0</sup> C, melt viscosity of 5-20 cP, and acoustic-loss value of less than 100 dB/mm. The ink contains colorant such as a dye or pigment, 0.5-10% antioxidant, and UV absorber. There is also disclosed an acoustic ink jet printing process (col.2, lines 11-13, col.3, lines 9-15 and 31-32, col.4, line 14, col.6, lines 8-9, col.9, lines 60-62, and col.11, line 59-col.12, line 34).

There is also disclosed the use of 1-55% compounds such as benzaldehyde, 3-methoxy benzaldehyde, 4-methoxy benzaldehyde, 3-methyl benzaldehyde, 2-hydroxy benzaldehyde, cinnamaldehyde, and 5-97% compounds such as 2,3,4-trimethoxybenzaldehyde, 3,5-dimethoxy benzaldehyde, 2,5-dimethoxy benzaldehyde, and 3-benzyloxy benzaldehyde (col.6, lines 1-6, col.7, lines 1, 5-6, 8, 17, and 19 and col.8, lines 11-14 and 17).

It is noted that Malhotra et al. discloses 2,3,4-trimethoxybenzaldehyde, 2-hydroxy benzaldehyde, and 3-benzyloxy benzaldehyde, while the present claims require either 2,3,5-

Art Unit: 1714

trimethoxybenzaldehyde, 2,3,6-trimethoxybenzaldehyde, 2,4,5-trimethoxybenzaldehyde, 2,4,6-trimethoxybenzaldehyde, 3-hydroxy benzaldehyde, 4-hydroxy benzaldehyde, or 4-benzyloxy benzaldehyde. In each case, the only difference between the reference compounds and those presently claimed are the position of the substituents, i.e. ortho, meta, or para. However, absent any evidence of criticality, one of ordinary skill in the art would expect the benzaldehyde to function in the same manner regardless of the position of the substituents. Further Malhotra et al. broadly disclose the use of benzaldehydes or, for instance, 3-methoxy benzaldehyde, while the present claims require more specific types of benzaldehydes such as 4-hydroxy-3-methoxy benzaldehyde. However, one of ordinary skill in the art would have recognized that the broad disclosure of benzaldehyde or 3-methoxy benzaldehyde encompasses the use of specific types of these compounds such as those presently claimed, and that the choice of these specific types of compounds would have been within the bounds of routine experimentation.

The difference between Malhotra et al. and the present claimed invention is the requirement in the claims of (a) viscosity modifier and (b) aldehyde copolymer.

With respect to difference (a), Malhotra et al. discloses benzaldehyde compounds as presently claimed, but does not explicitly refer to these compounds as viscosity modifiers. However, given that the reference compounds are the same type as the compounds presently claimed, i.e. benzaldehydes, it would have been natural for one of ordinary skill in the art to infer that the reference compounds intrinsically function as viscosity modifiers, and thereby arrive at the claimed invention.

Art Unit: 1714

With respect to difference (b), Watt, which is drawn to ink compositions, discloses the use of polyglycidyl ethers of formaldehyde as a binder (col.3, lines 52-54 and col.4, lines 10-12).

In light of the motivation for using aldehyde copolymers disclosed by Watt as described above, it therefore would have been obvious to one of ordinary skill in the art to use these copolymers in the ink composition of Malhotra et al. in order to produce an ink with good flexibility and enhanced ejection from the ink jet printer or alternatively, improved adhesion to the substrate, and thereby arrive at the claimed invention.

**Response to arguments regarding 103 rejections**

7. Applicant's arguments filed 1/3/01 have been fully considered but they are not persuasive.

Specifically, applicant argues that:

(a) There is no motivation to combine either Siddiqui or Watt with Malhotra et al. given that Malhotra et al. is drawn to solid inks and both Siddiqui and Watt are drawn to liquid inks.

(b) Malhotra et al. do not disclose the time necessary for the ink to change from solid to liquid state.

(c) There is no motivation to combine Malhotra et al. with Nishizaki et al.

(d) There is no disclosure in Schwarz et al. of combining aldehyde copolymer with nonpolymeric viscosity modifier.

Art Unit: 1714

(e) Malhotra et al. is not applicable against claim 21 given the “consisting essentially of” claim language as well as the amendment which limits the scope of the claim to nonpolymeric solid aldehyde viscosity modifiers.

With respect to argument (a), applicants have provided no clear and convincing evidence that components present in liquid ink jet inks cannot be added to solid ink jet inks. Further, note that Siddiqui and Watt are used as teaching references, and therefore, it is not necessary for these secondary references to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather these references each teach a certain concept, and in combination with the primary reference, disclose the presently claimed invention. If the secondary reference contained all the features of the present claimed invention, it would be identical to the present claimed invention, and there would be no need for secondary references.

With respect to argument (b), while applicant argues that compositions with the same melting temperature do not necessarily possess the same melting time, it is noted that not only does the ink composition of Malhotra et al. possess the same melting temperature as presently claimed, but further, Malhotra et al. taken in view of either Schwarz et al., Siddiqui, or Watt comprises the same ingredients as presently claimed, i.e. aldehyde copolymer, nonpolymeric aldehyde viscosity modifier, ink vehicle, colorant. In light of this, and absent evidence to the

Art Unit: 1714

contrary, it is the examiner's position that the ink composition disclosed by Malhotra et al. taken in view of either Schwarz et al., Siddiqui, or Watt would possess the same melting time as presently claimed.

With respect to argument (c), firstly, it is noted that given that Malhotra et al. in view of either Schwarz et al. or Siddiqui, Watt, and Takazawa et al. disclose an ink with similar ingredients to those presently claimed, i.e. aldehyde copolymer, nonpolymeric aldehyde, colorant, antioxidant, and UV absorber, it is natural to infer that the ink intrinsically possesses haze value as presently claimed, absent any evidence to the contrary.

To the extent that Nishizaki et al. disclose a hot melt ink comprising synthetic polymer and colorant suitable for use in ink jet printing and further disclose that such hot melt inks having a haze value of 0-30 exhibit superior light transmission properties, Nishizaki et al. remains a relevant reference against the present claims.

With respect to argument (d), while it is agreed that there is no disclosure in Malhotra et al. of an aldehyde copolymer and no disclosure in Schwarz et al. of a nonpolymeric aldehyde viscosity modifier, that it why these references are used in combination. The ink of Malhotra et al. is open to the inclusion of other ingredients and nothing in Malhotra et al. negates against using ingredients such as an aldehyde copolymer. Further, as discussed with respect to argument (a) above, Schwarz et al. is used to teach a specific concept, namely that aldehyde copolymers are



Art Unit: 1714

conventionally known to be used in hot melt inks to provide printed images with flexibility to prevent cracking and creasing, and in combination with Malhotra et al. discloses the present invention. Thus, absent evidence to the contrary, it would have been obvious to one of ordinary skill in the art to use aldehyde copolymer of Schwarz et al. in the ink of Malhotra et al., and thereby arrive at the claimed invention.

With respect to argument (e), although it is recognized that the consisting essentially of” narrows the scope of the claim as does the amendment limiting the nonpolymeric viscosity modifiers to those “having a melting point of no less than about 65° C”, nevertheless, the burden is on the applicant to show that the additional ingredients in the prior art, i.e. nonpolymeric liquid aldehydes, would in fact be excluded from the claims. Absent such a showing, “consisting essentially of” will be construed as equivalent to “comprising of”. See MPEP 2111.03.

Thus, Malhotra et al. remains a relevant reference against the present claims.

**Allowable Subject Matter**

8. Claim 22 is allowable over the “closest” prior art Malhotra et al. (U.S. 5,931,995) for the following reasons:

Malhotra et al., which is drawn to hot melt ink, disclose that the ink comprises nonpolymeric solid aldehyde viscosity modifiers, colorant, antioxidant, and UV absorber as well as nonpolymeric liquid viscosity modifiers.

Art Unit: 1714

Claim 22 recites "consisting of" claim language which limits the ink composition described in the claims from containing any other ingredients besides those explicitly recited in the claims.

Given that Malhotra et al. disclose the use of nonpolymeric liquid viscosity modifiers which are outside the scope of ingredients disclosed in claim 22, Malhotra et al. is no longer a relevant reference against the present claim.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

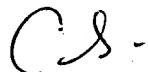
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie Shosho whose telephone number is (703) 305-0208. The examiner

Art Unit: 1714

can normally be reached on Mondays-Thursdays from 7:00 am to 4:30 pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan, can be reached on (703) 306-2777. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3599.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Callie Shosho

3/22/01

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